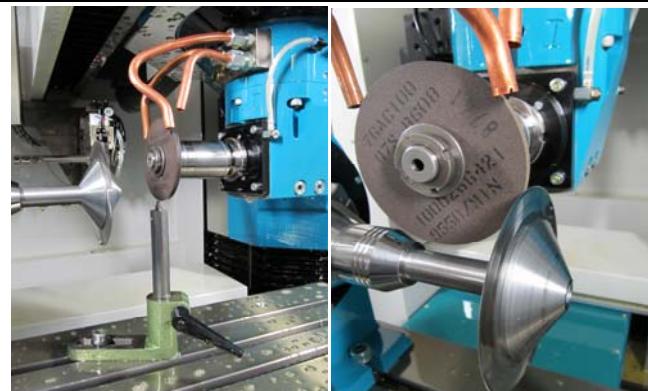


Circular Paper-Knife Ø110

A24-100

The Corundum-Wheel is dressed on a CVD-Needle Insert before grinding the 15° cutting edge on both sides in two passes. The accessibility for grinding the blade in one clamping lead to insufficient support expressed in burrgeneration on the cutting edge. Therefore a truing operation on top is executed to eliminate the burr. The 4 degree sides are then ground. For each knife the wheel is dressed, each blade is ground under equal conditions and allows to maintain constant dimensions of the blades. All the operations consist of oscillations of the wheel at 500 mm/Min while the tool is rotating at 150 rpm. To reduce burr creation on the cutting edge due to pressure, the wheels position is perpendicular. Where for the 4° chamfer the wheel is tangential: surfacefinish is much better, but more pressure is generated.



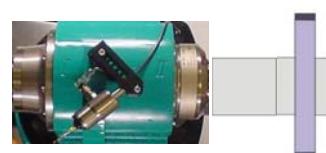
1. Cycletime for Resharpening

| | | | | | | | | |
|--|----------|-------------|------------|-------------|------------|-----|----------|---------|
| Workpiece: Ø111 mm, T=1.67 mm, 15° and 4° chamfers, Dress on single point PCD Material HSS | | | | | | | | |
| Operations | Dress | 15° right 1 | 15° left 1 | 15° right 2 | 15° left 2 | Top | 4° right | 4° left |
| Feed [mm/Min] | 100 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Power [kW] | 1 | 4 | 3 | 2 | 2 | 2 | 3 | 2 |
| Cutting feed [m/s] | 24 | 32 | 32 | 32 | 32 | 55 | 50 | 50 |
| Used wheels | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Grinding time [s] | 19 | 71 | 71 | 61 | 61 | 81 | 81 | 81 |
| Total cycle time | 8 Min 43 | | | | | | | |

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

2. Used Grinding Wheels

| | |
|---|----------------|
| 1 | 1A1 Ø100 SG100 |
|---|----------------|



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3. Machine and Software Requirements

Machines: 5 axes CNC grinders : NORMA CFG
 Control: Fanuc 310i
 Accessories: A-Rapid, Point Dresser

Responsible engineer: OP. 27.5.11

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J. SCHNEEBERGER Maschinen AG 4914 Roggwil Switzerland
 Subsidiaries in: France, Deutschland, Italia, United States, UK, China